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COOLEY GODWARD LLP

ATTN: Patent Group

Five Palo Alto Square

3000 El Camino Real

Palo Alto, CA 94306-2155

EXAMINER

DICUS, TAMRA

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/037,864

Applicant(s)

MONTE C. MAGILL ET AL.

Examiner

Tamra L. Dicus

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

The Examiner acknowledges cancellation of claims 25-45.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4-15 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,532,039 to Payne et al.

3. Payne teaches thermal barriers comprising opposing surfaces defining a chamber. A connecting structure (a barrier zone) is attached to each of the opposing surfaces and is positioned within the chamber, subdividing the chamber into a plurality of cells (regions). A temperature stabilizing material is disposed in each cell, disposed in the cells throughout the thermal barrier. Thermal barriers 60 and 61 (first and second barriers) are shown in Figures 7 and 8. The barriers are of polyethylene (col. 5, lines 35-40, meeting claim 13). Interconnecting walls 54 of barrier 50 may be of a rectangular, hexagonal, or other regular shape, and are referred to herein as "honey-comb" structures. See col. 6, lines 1-15. Also interconnecting sheet 35 defines cells (porous) between thermal barrier sheets 33 and 34. See col. 5, lines 34-40 (equivalent to base material of a sheet or film-claim 2). The base material also shows porosity in Figures 4 and 8 and prevents the phase change material from migrating to other regions. The temperature stabilizing material comprises a phase change material, such as a paraffinic hydrocarbon, hydrated salt, plastic crystal or glycol (instant claim 10). See col. 4, lines 15-28.

Art Unit: 1774

The temperature stabilizing material may be microencapsulated to prevent leakage and to facilitate the usage of different phase change materials within a single barrier (see col. 2, lines 30-35). Col. 3, lines 63-68 teaches two or more different temperature stabilizing (phase change) materials can be used to address particular temperature ranges and such materials can be mixed together, microencapsulated or segregated into different zones, layers or chambers within a thermal barrier. Several different compatible phase change materials may be utilized within the barrier to broaden the temperature ranges at which the thermal barrier is effective (instant claim 11). See patented claims 1-8.

Barrier 10 is comprised of a first sheet 12 and a second sheet 14 positioned in a closely spaced apart orientation. Sheets 12 and 14 are selected for various desired characteristics such as flexibility or permeability, and are constructed from plastic, foil, film, paper or foam (col. 4, line 63-col. 5, line 4), meeting claims 2, 4, 5, and 12.

Regarding instant claim 7, the separate bonding areas and surfaces are shown in Figure 8.

Regarding instant claim 8, "is formed by applying thermal energy" is a process limitation. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. Patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113). Furthermore, the invention defined by a product-by-process invention is a product NOT a process. *In re Bridgeford*, 357 F. 2d 679. It is the patentability of the product claimed and NOT of the recited process steps which must be established. *In re Brown*, 459 F. 2d 531.

Regarding instant claim 9, the first and second barrier layers are bonded to the base material, see Figures 4 & 8.

Art Unit: 1774

Regarding claims 14-15, Payne teaches in any of the embodiments, one or more of the sheets may have a reflective material applied to one or both sides, or may be constructed of a reflective material to further reduce radiant heat loss or absorption. See col. 7, lines 45-50.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,532,039 to Payne et al. in view of USPN 5,900,320 to Ogawa et al.

Payne is relied upon above. Payne teaches a base material of foam, but does not teach the specific material such as polyurethane. Ogawa teaches foamed plastic material for use as insulating material. The foamed plastic is used for lightweight structural material (col. 1, lines 20-25) and may be of polyurethane or polyethylene (col. 1, lines 45-51). It would have been obvious to one of ordinary skill in the art to modify the thermal barriers of Payne to define regions of polyurethane foam in place of polyethylene because Ogawa teaches foam can be made of polyurethane or polyethylene at col. 1, lines 20-51. The two polymers are shown to be functional equivalents.

6. Claims 16-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,532,039 to Payne et al. in view of USPN 4,139,024 to Adorjan.

Art Unit: 1774

7. Payne teaches thermal barriers comprising opposing surfaces defining a chamber. A connecting structure (a barrier zone) is attached to each of the opposing surfaces and is positioned within the chamber, subdividing the chamber into a plurality of cells (regions). A temperature stabilizing material is disposed in each cell, disposed in the cells throughout the thermal barrier. Thermal barriers 60 and 61 (first and second barriers) are shown in Figures 7 and 8. The barriers are of polyethylene (col. 5, lines 35-40, meeting claim 13). Interconnecting walls 54 of barrier 50 may be of a rectangular, hexagonal, or other regular shape, and are referred to herein as "honey-comb" structures. See col. 6, lines 1-15. Also interconnecting sheet 35 defines cells (porous) between thermal barrier sheets 33 and 34. See col. 5, lines 34-40 (equivalent to base material of a sheet or film-claims 17-18). The base material also shows porosity in Figures 4 and 8 and prevents the phase change material from migrating to other regions (instant claim 18). The temperature stabilizing material comprises a phase change material, such as a paraffinic hydrocarbon, hydrated salt, plastic crystal or glycol. The temperature stabilizing material may be microencapsulated to prevent leakage and to facilitate the usage of different phase change materials within a single barrier (see col. 2, lines 30-35). Col. 3, lines 63-68 teaches two or more different temperature stabilizing (phase change) materials can be used to address particular temperature ranges and such materials can be mixed together, microencapsulated or segregated into different zones, layers or chambers within a thermal barrier. Several different compatible phase change materials may be utilized within the barrier to broaden the temperature ranges at which the thermal barrier is effective (meeting claims 19-20). See patented claims 1-8.

Barrier 10 is comprised of a first sheet 12 and a second sheet 14 positioned in a closely spaced apart orientation. Sheets 12 and 14 are selected for various desired characteristics such as flexibility or permeability, and are constructed from plastic, foil, film, paper or foam (col. 4, line 63-col. 5, line 4), meeting claim 21.

Regarding claims 23-24, Payne teaches in any of the embodiments, one or more of the sheets may have a reflective material applied to one or both sides, or may be constructed of a reflective material to further reduce radiant heat loss or absorption. See col. 7, lines 45-50.

8. Further regarding instant claim 16 and claim 17, Payne does not disclose a plurality of base material positioned between a first and second barrier layer. However, Adorjan teaches a thermal insulation structure. The outer surface of the inner wall (barrier) is covered with a reflective film. A cavity (regions) contains polyurethane foam (see col. 1, lines 29-35). Adorjan teaches plurality of polyurethane foam multilayers may be between barrier layers as shown in Figure 2. It would have been obvious to one of ordinary skill in the art to modify the thermal barrier of Payne to further include a plurality of base layers because Adorjan teaches cavities contain polyurethane foams of open or closed cell (porous or non porous) to provide heat insulation as taught by Adorjan at col. 1, line 65-col. 2, line 15.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- USPN 5,955,188 to Pushaw teaches phase change material impregnated in foam
- USPN 6,189,279 to Fiechtl teaches floating floor underlay

Art Unit: 1774

- USPN 4,988,344 to Reising et al. teaches absorbent articles with multiple layer absorbent layers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Tamra L. Dicus
Examiner
Art Unit 1774

September 24, 2003

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

